

LISTING OF THE CLAIMS

Please **AMEND** claims 1, 5, and 8 as shown below.

Please **ADD** claim 10 as shown below.

The following is a complete list of all claims in this application.

1) (Currently Amended) An apparatus for the fabrication of structural members of metal matrix composites comprising:

a ~~planar~~ surface;

a carriage mechanism;

a compaction device attached to said carriage mechanism so as to permit controlled ~~relative~~ translational and lateral movement ~~between~~ of said compaction device ~~and~~ across said ~~planar~~ surface;

a metal matrix composite prepreg tape feeding mechanism that supplies metal matrix composite prepreg tape that addresses said ~~planar~~ surface to a junction between said ~~planar~~ surface and said compaction device as said metal matrix composite prepreg tape enters said junction; and

a laser generating a laser beam that impacts said metal matrix composite prepreg tape in said junction causing at least a surface of said metal matrix composite prepreg tape to fuse as said metal matrix composite prepreg tape passes under said compaction device.

2) (Previously Presented) The apparatus of claim 1 wherein said metal matrix composite prepreg tape comprises a matrix of aluminum or an aluminum alloy encompassing fibers selected from the group consisting of carbon, boron, ceramic and glass fibers.

3) (Previously Presented) The apparatus of claim 1 said laser comprises a stacked multi-bar infrared laser.

4) (Previously Presented) The apparatus of claim 3 wherein said stacked multi-bar infrared laser includes optical lenses that shape the infrared beam into a pattern that matches the cross sectional dimensions of said metal matrix composite prepreg tape.

5) (Currently Amended) The apparatus of claim 1 wherein said ~~planar~~ surface and said compaction device both comprise the same or different ceramic materials.

6) (Previously Presented) The apparatus of claim 1 further including preheaters that heat said metal matrix composite prepreg tape prior to entering said junction.

7) (Previously Presented) The apparatus of claim 6 wherein said preheaters comprise infrared reflector lamps.

8) (Currently Amended) The apparatus of claim 1 further including an optical pyrometer that addresses said junction and views said metal matrix composite prepreg tape in said junction

and provides temperature feedback information for controlling the power of said laser or the relative movement of said ~~planar~~ surface and said compaction device.

9) (Previously Presented) The apparatus of claim 1 further including a mechanism for inducing vibratory energy to said prepeg tape prior to entry into said junction at a frequency of between about 1000 and 25000 vibrations per minute.

10) (New) The apparatus of claim 1 wherein said surface is a planar surface.